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EXAMINER

CHEN, SHIH CHAO

ART UNIT PAPER NUMBER

2821

DATE MAILED: 11/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/627,928

Applicant(s)

CARPENTER ET AL.

Examiner

Shih-Chao Chen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 6/1/04.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/21/03, 06/1/04</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "61s". Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

2. Claims 2-10 are objected to because of the following informalities: in line 1, "A modular external antenna assembly" should be changed to --The modular external antenna assembly--. Appropriate correction is required.
3. Claims 12-15 are objected to because of the following informalities: in line 1, "A kit" should be changed to --The kit--. Appropriate correction is required.
4. Claim 17-18 are objected to because of the following informalities: in line 1, "A wireless terminal product" should be changed to --The wireless terminal product--. Appropriate correction is required.

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5. Claims 20-21 are objected to because of the following informalities: in line 1, "A method" should be changed to --The method--. Appropriate correction is required.
6. Claim 1 is objected to because of the following informalities: in line 7, the phrase "an internal antenna" should be changed to --the internal antenna--. Appropriate correction is required.
7. Claim 14 is objected to because of the following informalities: in line 2, the phrase "an internal planar inverted F-antenna" should be changed to --the internal planar inverted F-antenna--. Appropriate correction is required.
8. Claim 14 is objected to because of the following informalities: in line 3, the phrase "the modular antenna house" should be changed to --the modular housing--. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1, 4-7, 9-14 and 16-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Kivela (EP 0 833 455 A2).

Regarding claim 1, Kivela teaches in figures 6-7 and 12-13 a modular external antenna assembly adapted to replace an internal antenna [116] in a wireless terminal device [52], comprising: a modular antenna housing [122]; and an external antenna [130], the modular housing having a shape that is adapted to attach to a predetermined

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portion of a wireless terminal device that is configured to operate with the internal antenna [116].

Regarding claim 4, Kivela teaches in figures 6-7 and 12-13 the modular external antenna assembly according to Claim 1, wherein the modular antenna housing [122] is configured to define a rear panel of the wireless terminal device [52].

Regarding claim 5, Kivela teaches in figures 6-7 and 12-13 the modular external antenna assembly according to Claim 1, wherein the modular antenna housing [122] is configured to define a releaseably attachable panel member of a mobile telephone [50].

Regarding claim 6, Kivela teaches in figures 6-7 and 12-13 the modular external antenna assembly according to Claim 5, wherein the modular antenna housing [122] defines an upper rear panel of the mobile telephone.

Regarding claim 7, Kivela teaches in figures 6-7 and 12-13 the modular external antenna assembly according to Claim 1, wherein the external antenna [130] is a stub antenna that is configured to replace an internal planar inverted F-antenna (See page 6, lines 50-54).

Regarding claim 9, Kivela teaches in figures 6-7 and 12-13 the modular external antenna assembly according to Claim 1, wherein the external antenna [130] is configured as a retractable antenna that is configured to replace an internal planar inverted F-antenna (See page 6, lines 50-54).

Regarding claim 10, Kivela teaches in figures 6-7 and 12-13 the modular external assembly according to Claim 1, in combination with the wireless terminal [52], wherein

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the external antenna [130] is configured to mount to the rear of the wireless terminal device so as to reside over a ground plane (See page 7, lines 34-36) therein, the ground plane in the wireless terminal being configured to operatively engage the internal antenna [116] when the internal antenna is in position in the wireless terminal device.

Regarding claim 11, Kivela teaches in figures 6-7 and 12-13 an aftermarket internal antenna replacement kit for a wireless terminal device [52], comprising: a modular housing [122], an external antenna [130] held in the modular housing, the modular housing configured and sized to mount to a portion of a predetermined wireless terminal device that is configured to operate with an internal planar inverted F-antenna [116] (See page 6, lines 50-54).

Regarding claim 12, Kivela teaches in figures 6-7 and 12-13 the kit according to Claim 11, wherein the modular housing [122] is configured to define a rear panel of a mobile communications device [50].

Regarding claim 13, Kivela teaches in figures 6-7 and 12-13 the kit according to Claim 12, wherein the mobile communications device [50] is a mobile telephone.

Regarding claim 14, Kivela teaches in figures 6-7 and 12-13 the kit according to Claim 13, wherein the wireless device [52] has a first rear cover (See FIG. 12) that holds the internal planar inverted F-antenna [116] thereon and is releaseably attachable to the wireless terminal device, and wherein the modular housing [122] defines a second rear cover (See FIG. 130 that is configured to interchangeably and releaseably attach to the wireless device so as to replace the first rear cover.

Regarding claim 16, Kivela teaches in figures 6-7 and 12-13 a wireless terminal product, comprising: (a) a housing [122] having opposing front and back portions, the back portion configured with a cavity and frame that is sized and configured to releaseably accept an upper rear panel to enclose the cavity (See FIG. 6 and 12-13), the housing [122] configured to enclose a transceiver (It is inherent for mobile telephone) that transmits and receives wireless communications signals; (b) a ground plane (See page 7, lines 34-36) disposed within the housing; (c) a planar inverted-F internal antenna [116] configured and sized to be positioned within the housing and electrically connected with the transceiver, wherein the internal antenna [116] comprises a planar dielectric substrate and a planar conductive element disposed on the planar dielectric substrate (See page 7, lines 34-36), and wherein the internal antenna is integral with a first upper rear panel (See FIG. 12); (d) an external antenna [130] configured and sized to be positioned within the housing held on a second, releaseably attachable, upper rear panel member (See FIG. 13), wherein the first and second upper rear panels with the internal and external antenna, respectively, are configured and sized to be interchangeably attachable to the housing; and (e) a signal feed [126, 128] configured to electrically connect to either of the internal and external antennas via a connector positioned in the cavity of the housing, responsive to whether the first or second upper rear panel is in position on the wireless terminal.

Regarding claim 17, Kivela teaches in figures 6-7 and 12-13 the wireless terminal product according to Claim 16, wherein the wireless terminal product [50] is a mobile communications device; and wherein the device further comprise (f) a ground feed

connector (See page 7, lines 34-36) disposed in the housing cavity proximate the signal feed connector, electrically connected to one of the internal and external antennas [116, 130] depending on which of the first and second upper rear panels are in position on the wireless terminal.

Regarding claim 18, Kivela teaches in figures 6-7 and 12-13 the wireless terminal product according to Claim 16, wherein the wireless terminal product [50] comprises a wireless mobile telephone.

Regarding claim 19, Kivela teaches in figures 6-7 and 12-13 a method for retrofitting a wireless device configured to operate with an internal antenna [116] to allow replacement of the internal antenna with an external antenna [130]: providing a wireless terminal [50] with a housing [56] and an internal antenna [116]; providing an external antenna assembly [120] that has a predetermined shape and size that is configured to mount to the wireless terminal; and replacing the internal antenna so that the wireless terminal operates with the external antenna instead of the internal antenna.

Regarding claim 20, Kivela teaches in figures 6-7 and 12-13 the method according to Claim 19, wherein the internal antenna [116] is held on a first rear panel (See FIG. 12) that is configured to releasably engage the wireless terminal housing and the external antenna [130] is mounted to a second rear panel (See FIG. 13) that is configured to releasably engage the wireless terminal housing with the first and second rear panels being interchangeably mountable to the wireless terminal housing, and wherein the replacing step is carried out by removing the first panel and then attaching the second panel.



Regarding claim 21, Kivela teaches in figures 6-7 and 12-13 the method according to Claim 20, wherein the internal antenna [116] is a planar inverted F-antenna (See page 6, lines 50-54).

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 2 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kivela (Cited above) in view of Bolin et al. (WO 02/078123 A1).

Kivela teaches every feature of the claimed invention in paragraph 10 except for signal and ground connectors that reside substantially centrally in a top portion of the modular housing.

Bolin et al. teaches in figures 4-5 and 8 signal and ground connectors [11] that reside substantially centrally in a top portion of the modular housing.

In view of the above statement, it is a mere design choice to arrange the antenna signal and ground connectors at a substantially central top portion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute signal and ground connector as shown in Kivela by using signal and ground connectors that reside substantially centrally in a top portion of the modular housing as taught by Bolin et al. in order to change the position of feed and ground connector for a portable communication device.

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13. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kivela (Cited above) in view of Abbasi et al. (US 2003/0122726 A1).

Kivela teaches every feature of the claimed invention in paragraph 10 except for the signal feed is positioned on a downwardly protruding finger.

Abbasi et al. teaches in figure 5 the signal feed [140] is positioned on a downwardly protruding finger.

In view of the above statement, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the signal feed as shown in Kivela by using the signal feed as taught by Abbasi et al. in order to the feed contact extending from the radiating element (See col. 5, Abstract).

14. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kivela (Cited above) in view of Olsson et al. (WO 01/33664 A1).

Kivela teaches every feature of the claimed invention in paragraph 10 except for the external antenna is configured as a fin antenna.

Olsson et al. teaches in figure 4 the external antenna [10] is configured as a fin antenna.

In view of the above statement, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the external antenna as shown in Kivela by using the external antenna as taught by Olsson et al. in order to change the configuration of the external antenna for a portable telecommunication apparatus (See Abstract).

***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shih-Chao Chen whose telephone number is (571) 272-1819. The examiner can normally be reached on Monday-Friday from 7 AM to 4:30 PM, First Fri. off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Art Unit 2821

SXC  
November 22, 2004